

Remarks

Claims 1-20 are pending in the application. Reconsideration is respectfully requested.

Rejections Under 35 U.S.C. § 102

Claims 1-7 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Ledwidge. This rejection is respectfully traversed. With regard to independent claim 1, the Examiner states:

Ledwidge discloses (see claim 1) a method of measuring cavitation (formation of bubbles) in a fluid. The method includes sensing energy pulses associated with a plurality of cavitation events in a selected volume of the fluid. The method includes discriminating against cavitation events that occur in the fluid outside the selected volume. It is pointed out that the claimed "discriminating" step does not further patentably distinguish over the Ledwidge method since the step of sensing cavitation within a given volume inherently discriminates against cavitation outside the given volume. Claim 1 is so anticipated. Office action, at 2.

In response, Applicant respectfully submits that Ledwidge fails to teach or suggest, as recited in claim 1, "sensing energy pulses associated with a plurality of cavitation events in a selected volume of the fluid; and discriminating against cavitation events that occur *in the fluid outside the selected volume*" (emphasis added). Instead, Ledwidge discloses detecting sonic energy of one type of fluid in multiple fuel element subassemblies. Therefore, Ledwidge detects sonic energy in multiple fluids. Ledwidge discloses detecting sonic energy associated with small bubbles in the cooling fluid of multiple fuel element subassemblies. Within the fluid of each subassembly, Ledwidge fails to teach or suggest discriminating between cavitation events. In other

words, Ledwidge fails to disclose discriminating between cavitation events that occur in the cooling fluid and cavitation events that occur outside of the cooling fluid in the same subassembly. Thus, Ledwidge fails to disclose all elements of claim 1.

Additionally, Applicant respectfully submits that Ledwidge fails to teach or suggest "sensing energy pulses associated with a plurality of cavitation events in a *selected volume of the fluid*", as recited in Applicant's claim 1 (emphasis added). In Ledwidge, sonic energy associated with small bubbles in a cooling fluid of a fuel element subassembly is detected to determine whether a blockage of coolant fluid flow has occurred. Ledwidge discloses that where a blockage of coolant fluid flow has occurred, the flow of the coolant diminishes and it is likely that the fluid in the subassembly will begin to boil producing a spectrum with a characteristic peak or peaks. Ledwidge discloses monitoring coolant fluid within each subassembly to determine whether boiling has or is about to occur. Ledwidge fails to teach or suggest monitoring bubble formation in a select volume of fluid. Instead, Ledwidge discloses continuous monitoring of a non-selected volume of fluid in a subassembly which may change if coolant blockage occurs. Thus, the volume of the coolant within the subassembly is not a selected volume, as recited in Applicant's claim 1. Therefore, for at least these reasons, claim 1 is not anticipated or made obvious by Ledwidge.

Claims 2-7 depend from claim 1 and are therefore not anticipated or made obvious by Ledwidge for at least the same reasons as claim 1.

Also, claim 2 recites "measuring the cavitation density of the cavitation events in the selected volume in the fluid." Ledwidge fails to teach or suggest measuring cavitation density.

Further, claim 6 recites, "measuring the distribution of cavitation events in the selected volume of fluid." Ledwidge fails to teach or suggest this element.

Allowable Subject Matter

Claims 8-20 have been allowed.

Conclusion

For at least the reasons submitted above, Applicant submits that claims 1-20 are in condition for allowance. Accordingly, a Notice of Allowance is respectfully requested.

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Respectfully submitted,



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